

# Exhibit 4

**Assignment abstract of title for Application 14685511**

Invention title/Inventor	Patent	Publication	Application	PCT	International registration
WIRELESS END-USER DEVICE WITH DIFFERENTIAL TRAFFIC CONTROL POLICY LIST HAVING LIMITED USER CONTROL	9215613	20150223100	14685511		
Gregory G. Raleigh, Alireza Raissinia, James Lavine	Dec 15, 2015	Aug 6, 2015	Apr 13, 2015		

**Assignments (2 total)****Assignment 2**

Reel/frame	Execution date	Date recorded	Properties	Pages
041248/0777	Dec 29, 2016	Jan 4, 2017	56	6
Conveyance				
MERGER AND CHANGE OF NAME (SEE DOCUMENT FOR DETAILS).				
Assignors	Correspondent			
HEADWATER PARTNERS I LLC	ANN TAYLOR			
HEADWATER MANAGEMENT LLC	1011 PRUITT PLACE			
	TYLER, TX 75703			

## Assignee

HEADWATER RESEARCH LLC  
1011 PRUITT PLACE  
TYLER, TEXAS 75703

**Assignment 1**

Reel/frame	Execution date	Date recorded	Properties	Pages
035403/0490	Aug 16, 2011	Apr 14, 2015	1	3
Conveyance				
ASSIGNMENT OF ASSIGNORS INTEREST (SEE DOCUMENT FOR DETAILS).				
Assignors	Correspondent			
RALEIGH, GREGORY G.	ANN TAYLOR			
RAISSINIA, ALIREZA	555 TWIN DOLPHIN DR., SUITE 310			
LAVINE, JAMES	REDWOOD SHORES, CA 94065			

## Assignee

HEADWATER PARTNERS I LLC  
555 TWIN DOLPHIN DR., SUITE 310  
REDWOOD SHORES, CALIFORNIA 94065

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT3309404

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	ASSIGNMENT
<b>CONVEYING PARTY DATA</b>	
Name	Execution Date
GREGORY G. RALEIGH	08/16/2011
ALIREZA RAISSINIA	08/16/2011
JAMES LAVINE	08/16/2011

<b>RECEIVING PARTY DATA</b>	
Name:	HEADWATER PARTNERS I LLC
Street Address:	555 TWIN DOLPHIN DR., SUITE 310
City:	REDWOOD SHORES
State/Country:	CALIFORNIA
Postal Code:	94065

<b>PROPERTY NUMBERS Total: 1</b>	
Property Type	Number
Application Number:	14685511

<b>CORRESPONDENCE DATA</b>	
Fax Number:	
<i>Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.</i>	
Phone:	650-517-2791
Email:	ann.taylor@headwaterllc.com
Correspondent Name:	ANN TAYLOR
Address Line 1:	555 TWIN DOLPHIN DR., SUITE 310
Address Line 4:	REDWOOD SHORES, CALIFORNIA 94065
ATTORNEY DOCKET NUMBER:	RALEP032C1C9
NAME OF SUBMITTER:	ANN TAYLOR
SIGNATURE:	/Ann Taylor/
DATE SIGNED:	04/14/2015
<b>Total Attachments: 2</b>	
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source=RALE032C1C9_Assignment#page2.tif	

Attorney Docket No. 26WV-160509 [RALEP032]

## ASSIGNMENT

(1-8) Insert Name(s) of Inventor(s)

(1) Gregory G. Raleigh

(2) Alireza Raissinia

(3) James Lavine

For good and valuable consideration receipt of which is hereby acknowledged, the undersigned agree(s) to assign, and hereby do(es) assign, transfer and set over to:

(9) Insert name of Assignee

(9) Headwater Partners I, LLC

(10) Insert state of incorporation of Assignee

(10) State of Delaware

(11) Insert address of Assignee

(11) of 350 Marine Parkway, Suite 300, Redwood City, California, 94065, U.S.A.

(hereinafter designated as the Assignee) the entire worldwide right, title, interest, and patent applications and patents for every country, including divisions, reissues, continuations and all other extensions, rights and priorities in the invention known as and subject matter contained in

(12) Insert Identification of Invention, such as Title, Case Number or Foreign Application Number

(12) Device-Assisted Services for Protecting Network Capacity  
(Case No. 26WV-160509 [RALEP032], Serial No. 13/134,028) for which the undersigned have filed an application for patent in United States of America

(13) Insert Date of Filing of Application

(13) on May 25, 2011

1) The undersigned agree(s) to execute all papers necessary in connection with the application and any continuing or division applications thereof and also to execute separate assignments in connection with such applications as the Assignee may deem necessary or expedient.

2) The undersigned agree(s) to execute all papers necessary in connection with any interference which may be declared concerning this application or continuation or division thereof and to cooperate with the Assignee in every way possible in obtaining evidence and going forward with such interference.

3) The undersigned agree(s) to execute all papers and documents and perform any act which may be necessary in connection with claims or provisions of the International Convention for Protection of Industrial Property or similar agreements.

4) The undersigned agree(s) to perform all affirmative acts which may be necessary to obtain a grant of a valid United States patent to the Assignee.

5) The undersigned hereby authorize(s) and request(s) the Commissioner for Patents and the duly constituted authorities of foreign countries to issue any and all Letters Patents resulting from said application or any division or divisions or continuing or reissue applications thereof to the said Assignee, its successors and assigns, as Assignee of the entire right, title and interest, and hereby covenants that he has (they have) full right to convey the entire interest herein assigned, and that he has (they have) not executed and will not execute, any agreement in conflict herewith.

Attorney Docket No. 26WV-160509 [RALEP032]

6) The undersigned hereby grant(s)

Marc A. Sockol, Reg. No. 40,823; Shaalu Mehra, Reg. No. 44,934; Daniel C. Kloke, Reg. No. 58,417; William F. Ahmann, Reg. No. 52,548; Mukund H. Sharma, Reg. No. 64,692; and all attorneys and agents associated with Customer No. 69849.

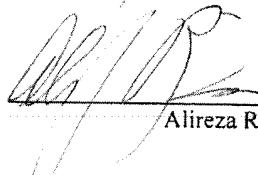
*the power to insert on this assignment any further identification which may be necessary or desirable in order to comply with the rules of the United States Patent and Trademark Office for recordation of this document.*

Date 8/16/2011



Gregory G. Raleigh

Date 8-16-2011



Alireza Raissinia

Date 8/16/11



James Lavine

Electronic Version v1.1  
Stylesheet Version v1.2

EPAS ID: PAT4210295

SUBMISSION TYPE:	NEW ASSIGNMENT
NATURE OF CONVEYANCE:	MERGER AND CHANGE OF NAME
EFFECTIVE DATE:	12/29/2016

#### CONVEYING PARTY DATA

Name	Execution Date
HEADWATER PARTNERS I LLC	12/29/2016

#### NEWLY MERGED ENTITY DATA

Name	Execution Date
HEADWATER MANAGEMENT LLC	12/29/2016

#### MERGED ENTITY'S NEW NAME (RECEIVING PARTY)

Name:	HEADWATER RESEARCH LLC
Street Address:	1011 PRUITT PLACE
City:	TYLER
State/Country:	TEXAS
Postal Code:	75703

#### PROPERTY NUMBERS Total: 56

Property Type	Number
Patent Number:	8839387
Patent Number:	8839388
Patent Number:	8868455
Patent Number:	8886162
Patent Number:	8893009
Patent Number:	8897743
Patent Number:	8897744
Patent Number:	8898079
Patent Number:	8898293
Patent Number:	8903452
Patent Number:	8924469
Patent Number:	8924543
Patent Number:	8924549
Patent Number:	8948025
Patent Number:	9014026

PATENT

504163618

REEL: 041248 FRAME: 0777

HW397-00051486

Property Type	Number
Patent Number:	9026079
Patent Number:	9037127
Patent Number:	9094311
Patent Number:	9137701
Patent Number:	9137739
Patent Number:	9143976
Patent Number:	9154428
Patent Number:	9173104
Patent Number:	9179308
Patent Number:	9179315
Patent Number:	9179316
Patent Number:	9179359
Patent Number:	9198042
Patent Number:	9198074
Patent Number:	9198075
Patent Number:	9198076
Patent Number:	9198117
Patent Number:	9204282
Patent Number:	9204374
Patent Number:	9215159
Patent Number:	9215613
Patent Number:	9220027
Patent Number:	9225797
Patent Number:	9232403
Patent Number:	9247450
Patent Number:	9253663
Patent Number:	9258735
Patent Number:	9270559
Patent Number:	9271184
Patent Number:	9277433
Patent Number:	9277445
Patent Number:	9319913
Patent Number:	9351193
Patent Number:	9386121
Patent Number:	9386165
Patent Number:	9392462
Patent Number:	9491199
Patent Number:	9491564

Property Type	Number
Patent Number:	9521578
Patent Number:	9532161
Patent Number:	9532261

**CORRESPONDENCE DATA****Fax Number:**

*Correspondence will be sent to the e-mail address first; if that is unsuccessful, it will be sent using a fax number, if provided; if that is unsuccessful, it will be sent via US Mail.*

Phone: 903-201-6211  
Email: patent@headwaterllc.com  
Correspondent Name: ANN TAYLOR  
Address Line 1: 1011 PRUITT PLACE  
Address Line 4: TYLER, TEXAS 75703

NAME OF SUBMITTER:	ANN TAYLOR
SIGNATURE:	/Ann Taylor/
DATE SIGNED:	01/04/2017

**Total Attachments: 3**

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# Delaware

The First State

Page 1

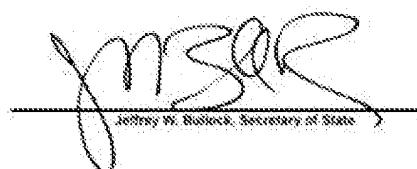
I, JEFFREY W. BULLOCK, SECRETARY OF STATE OF THE STATE OF  
DELAWARE, DO HEREBY CERTIFY THE ATTACHED IS A TRUE AND CORRECT  
COPY OF THE CERTIFICATE OF MERGER, WHICH MERGES:

"HEADWATER PARTNERS I LLC", A DELAWARE LIMITED LIABILITY  
COMPANY,

WITH AND INTO "HEADWATER MANAGEMENT LLC" UNDER THE NAME OF  
"HEADWATER RESEARCH LLC", A LIMITED LIABILITY COMPANY ORGANIZED  
AND EXISTING UNDER THE LAWS OF THE STATE OF DELAWARE, AS  
RECEIVED AND FILED IN THIS OFFICE ON THE TWENTY-NINTH DAY OF  
DECEMBER, A.D. 2016, AT 3:02 O'CLOCK P.M.

4966025 8100M  
SR# 20167326785

You may verify this certificate online at [corp.delaware.gov/authver.shtml](http://corp.delaware.gov/authver.shtml)



A handwritten signature of "J.W. Bullock" is written over a horizontal line. Below the line, the text "Jeffrey W. Bullock, Secretary of State" is printed in a smaller font.

Authentication: 203606635  
Date: 12-29-16

**PATENT**  
**REEL: 041248 FRAME: 0780**

**HW397-00051489**

State of Delaware  
Secretary of State  
Division of Corporations  
Delivered 03:02 PM 12/29/2016  
FILED 03:02 PM 12/29/2016  
SR 20167326785 - File Number 4966025

**CERTIFICATE OF MERGER**

**MERGING**

**HEADWATER PARTNERS I LLC  
A DELAWARE LIMITED LIABILITY COMPANY**

**WITH AND INTO**

**HEADWATER MANAGEMENT LLC  
A DELAWARE LIMITED LIABILITY COMPANY**

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Pursuant to Section 18-209 of the Delaware Limited Liability Company Act

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Headwater Management LLC, a Delaware limited liability company (the “**LLC**”), does hereby certify as follows:

**FIRST:** The LLC is a limited liability company duly formed and existing under the laws of the State of Delaware and Headwater Partners I LLC (the “**Company**”) is a limited liability company duly formed and existing under the laws of the State of Delaware.

**SECOND:** The Agreement and Plan of Merger (the “**Merger Agreement**”), dated as of December 29, 2016, by and among the Company and the LLC, setting forth the terms and conditions of the merger of the Company with and into the LLC (the “**Merger**”), has been approved, adopted, certified, executed and acknowledged by the LLC and the Company in accordance with Section 18-209 of the Delaware Limited Liability Company Act.

**THIRD:** The LLC shall be the surviving entity of the Merger (the “**Surviving LLC**”) and the name of the Surviving LLC shall be changed to “Headwater Research LLC”.

**FOURTH:** The executed Merger Agreement is on file at the principal place of business and office of the Surviving LLC at the following address: 1011 Pruitt Place, Tyler, Texas 75703.

**FIFTH:** A copy of the Merger Agreement will be furnished by the Surviving LLC, on request and without cost, to any member of the Company or the LLC.

**SIXTH:** The Merger shall be effective upon the filing of this Certificate of Merger with the Secretary of State of the State of Delaware.

\* \* \*

**IN WITNESS WHEREOF**, Headwater Management LLC has caused this Certificate of Merger to be executed by an authorized person on December 29, 2016.

**HEADWATER MANAGEMENT LLC**

By: /s/ Greg Raleigh

Name: Greg Raleigh

Title: Manager

[Signature Page to Certificate of Merger]

RECORDED: 01/04/2017

**PATENT**  
**REEL: 041248 FRAME: 0782**

HW397-00051491